AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

What is claimed is:

1. (Currently amended) A method of identifying a candidate branching morphogenesis modulating agent, said method comprising the steps of:

(a) providing an assay system comprising a cyclin-dependent kinase like 1 (CDKL1) polypeptide or nucleic acid;

(b) contacting the assay system with a candidate test agent ~~under conditions whereby, but for the presence of the test agent, the system provides a reference activity~~; and

(c) ~~detecting a test agent-biased activity of the assay system, wherein a difference between the test agent-biased activity and the reference activity identifies the test agent as~~ determining the activity or expression of CDKL1 polypeptide or nucleic acid in the assay system, wherein a change in the activity or expression of CDKL1 polypeptide or nucleic acid between the presence and absence of said candidate test agent indicates the presence of a candidate branching morphogenesis modulating agent.

2. (Currently amended) The method of Claim 1, wherein the assay system includes a screening assay comprising a CDKL1polypeptide, and the candidate test agent is a small molecule modulator.

3. (Currently amended) The method of Claim 2, wherein the screening assay is a kinase assay.

4. (Currently amended) The method of Claim 1, wherein the assay system includes a binding assay comprising an CDKL1 polypeptide and the candidate test agent is an antibody.

5. (Currently amended) The method of Claim 1, wherein the assay system includes an expression assay comprising an CDKL1 nucleic acid and the candidate test agent is a nucleic acid modulator.

6. (Currently amended) The method of Claim 5, wherein the nucleic acid modulator is an antisense oligomer.

7. (Currently amended) The method of Claim 6, wherein the nucleic acid modulator is a phosphorothioate morpholino oligomer (PMO).

8. (Currently amended) The method of Claim 1, wherein the assay system comprises cultured cells or a nonhuman animal expressing CDKL1, and wherein the assay system includes an assay that detects an agent-biased change in branching morphogenesis.

9. (Currently amended) The method of Claim 8, wherein the branching morphogenesis is angiogenesis.

10. (Currently amended) The method of Claim 8, wherein the assay system comprises cultured cells.

11. (Currently amended) The method of Claim 10, wherein the assay detects an event selected from the group consisting of cell proliferation, cell cycling, apoptosis, tubulogenesis, cell migration, cell sprouting, and response to hypoxic conditions.

12. (Currently amended) The method of Claim 10, wherein the assay detects tubulogenesis or cell migration or cell sprouting, and wherein the assay system comprises the step of testing the cellular response to stimulation with at least two different pro-angiogenic agents.

13. (Currently amended) The method of Claim 10, wherein the assay detects tubulogenesis or cell migration, and wherein cells are stimulated with an inflammatory angiogenic agent.

14. (Currently amended) The method of Claim 8, wherein the assay system comprises a non-human animal.

15. (Currently amended) The method of Claim 14, wherein the assay system includes a matrix implant assay, a xenograft assay, a hollow fiber assay, or a transgenic tumor assay.

16. (Currently amended) The method of Claim 15, wherein the assay system includes a transgenic tumor assay that includes a mouse comprising a RIP1-Tag2 transgene.

17. (Currently amended) The method of Claim 1, comprising the additional steps of:

(d) providing a second assay system comprising cultured cells or a non-human animal expressing CDKL1, wherein the second assay system includes a second assay that detects an agent-biased change in an activity associated with branching morphogenesis;

(e) contacting the second assay system with the candidate test agent of (b) or an agent derived therefrom ~~under conditions whereby, but for the presence of the test agent or agent derived therefrom, the system provides a reference activity~~; and

(f) ~~detecting an agent-biased activity of the second assay system, wherein a difference between the agent-biased activity and the reference activity of the second assay system~~ determining the activity or expression of CDKL1 in the second assay system, wherein a change in CDKL1 activity or expression between the presence and absence of said candidate test agent confirms the candidate test agent or agent derived therefrom as a candidate branching morphogenesis modulating agent~~, and wherein the second assay system includes a second assay that detects an agent-biased change in an activity associated with branching morphogenesis~~.

18. (Currently amended) The method of Claim 17, wherein second assay detects an agent-biased change in an activity associated with angiogenesis.

19. (Currently amended) The method of Claim 17, wherein the second assay system comprises cultured cells.

20. (Currently amended) The method of Claim 19, wherein the second assay detects an event selected from the group consisting of cell proliferation, cell cycling, apoptosis, tubulogenesis, cell migration, cell sprouting and response to hypoxic conditions.

21. (Currently amended) The method of Claim 20, wherein the second assay detects tubulogenesis or cell migration or cell sprouting, and wherein the second assay system comprises the step of testing the cellular response to stimulation with at least two different pro-angiogenic agents.

22. (Currently amended) The method of Claim 20, wherein the assay detects tubulogenesis or cell migration, and wherein cells are stimulated with an inflammatory angiogenic agent.

23. (Currently amended) The method of Claim 17, wherein the assay system comprises a non-human animal.

24. (Currently amended) The method of Claim 23, wherein the assay system includes a matrix implant assay, a xenograft assay, a hollow fiber assay, or a transgenic tumor assay.

25. (Currently amended) The method of Claim 24, wherein the assay system includes a transgenic tumor assay that includes a mouse comprising a RIP1-Tag2 transgene.

26. (Withdrawn) A method of modulating branching morphogenesis in a mammalian cell comprising contacting the cell with an agent that specifically binds a CDKL1 polypeptide or nucleic acid.

27. (Withdrawn) The method of Claim 26 wherein the agent is administered to a mammalian animal predetermined to have a pathology associated with branching morphogenesis.

28. (Withdrawn) The method of Claim 26 wherein the agent is a small molecule modulator, a nucleic acid modulator, or an antibody.

29. (Withdrawn) The method of Claim 26 wherein the branching morphogenesis is angiogenesis

30. (Withdrawn) The method of Claim 29 wherein tumor cell proliferation is inhibited.

31. (Withdrawn) A method for diagnosing a disease in a patient comprising:
(a) obtaining a biological sample from the patient;
(b) contacting the sample with a probe for MBM expression;
(c) comparing results from step (b) with a control; and
(d) determining whether step (c) indicates a likelihood of disease.

32. (Withdrawn) The method of Claim 31 wherein said disease is cancer.

33. (Withdrawn) The method according to Claim 32, wherein said cancer is pancreas or stomach cancer.